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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/836,144	04/17/2001	Hiroko Iwasaki	2271/50717-AY	7345

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EXAMINER

MCPHERSON, JOHN A

ART UNIT	PAPER NUMBER
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1756

DATE MAILED: 11/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/836,144

Applicant(s)

IWASAKI, HIROKO

Examiner

John A. McPherson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 12 August 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 7-21 is/are pending in the application.
- 4a) Of the above claim(s) 7-11 and 13-15 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 12 and 16-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |                                                                                                                        |                                                                                         |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                                                       | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____                                                |

## **DETAILED ACTION**

### ***Response to Amendment***

1. This Office Action is responsive to the Amendment filed 8/12/05.

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 12 and 16-21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 12 and 16 each recites the limitation "said thermal conductivity of said protection layer". See claim 12, line 8 and claim 16, line 18. There is insufficient antecedent basis for this limitation in the claim. Claims 12 and 16 each provide antecedent basis for the thermal conductivity of a compound, which is component of the protection layer, but these claims do not provide antecedent basis for the thermal conductivity of the protection layer (which further comprises a basic material, in addition to the compound).

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 12, 16 and 18-21 are rejected under 35 U.S.C. 102(b) as being anticipated by US 4,920,007 (US '007) for the reasons of record as set forth in paragraph 4 of Office Action mailed 3/11/05, and as further discussed below.

4. Claims 12 and 16-21 are rejected under 35 U.S.C. 102(b) as being anticipated by US 4,902,584 (US '584) for the reasons of record as set forth in paragraph 5 of Office Action mailed 3/11/05, and as further discussed below.

### ***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 12, 16 and 18-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 5,156,693 (US '693) in view of US 4,920,007 (US '007) for the reasons of record as set forth in paragraph 6 of Office Action mailed 3/11/05, and as further discussed below.

6. Claims 12 and 16-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 5,156,693 (US '693) in view of US 4,902,584 (US '584) for the reasons of

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record as set forth in paragraph 7 of Office Action mailed 3/11/05, and as further discussed below.

### ***Response to Arguments***

7. Applicant's arguments filed 8/12/05 have been fully considered but they are not persuasive. Applicant argues that the thermal conductivity of the protection layer is a distinguishing feature of the claimed invention which is not found in the cited art. However, the thermal conductivity of silicon nitride in the bulk state is an inherent property of this compound, therefore the protective layers of US '007 (Sawamura) and US '584 (Uchiyama) meet this limitation of the presently claimed invention.

Furthermore, Applicant argues that neither US '007 nor US '584 teach or suggest a protection layer for a phase variation type data recording medium including a phase variation type recording layer substantially constituted by Ag, In, Sb and Te, wherein the protection layer comprises SiO<sub>2</sub> as a basic material, and a compound having a thermal conductivity greater than or equal to 10 W/m.deg when in the bulk state, said compound comprising silicon nitride in a molar ration with the basic material of 10% to 85% silicon nitride, and the thermal conductivity of said protection layer allows amorphous portions to be recorded in said recording layer through heating followed by rapid cooling, while protecting other portions of said recording layer from heating during said recording to said amorphous portions.

However, the phrase "for a phase variation type data recording medium including a phase variation type recording layer substantially constituted by Ag, In, Sb and Te" is

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a statement of intended use for the claimed protection layer, and therefore does not provide a patentable distinction between the presently claimed protection layer and the protection layer of the applied prior art, which is utilized with a different recording layer. Additionally, the limitation "wherein the protection layer comprises SiO<sub>2</sub> as a basic material, and a compound having a thermal conductivity greater than or equal to 10 W/m.deg when in the bulk state, said compound comprising silicon nitride in a molar ratio with the basic material of 10% to 85% silicon nitride" is disclosed by the applied prior art, which teaches a protective layer comprising SiO<sub>2</sub> and silicon nitride, wherein the silicon nitride is present in a molar ratio within the range of the presently claimed invention. Finally, the phrase "and the thermal conductivity of said protection layer allows amorphous portions to be recorded in said recording layer through heating followed by rapid cooling, while protecting other portions of said recording layer from heating during said recording to said amorphous portions" is likewise a statement of intended use for the claimed protection layer. Furthermore, this phrase also describes an inherent property of the protection layer, because the ability to record amorphous portions while protecting other portions is due to the thermal conductivity of the protection layer, which is dependent upon the materials utilized for the basic material and the compound, and the mixing ratio thereof.

With respect to the combinations of US '693 (Ide) with US '007 and US '584, Applicant argues that US '007 and US '584 are directed to magneto-optical recording media, therefore one skilled in the art would not have looked to modify the optical information recording medium of US '693 according to the teachings of US '007 and US

'584 regarding the constitution of a heat-resistance protective layer. However, such protection layers are utilized in both phase change optical recording media and magneto-optical recording media. For example, see US '584 which discloses phase conversion recording layers at column 6, line 62 to column 7, line 17, as well as the magneto-optical recording layer noted by Applicant.

### ***Conclusion***

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.


9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to John A. McPherson whose telephone number is (571)

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272-1386. The examiner can normally be reached on Monday through Friday, 8:00 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Huff can be reached on (571) 272-1385. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



John A. McPherson  
Primary Examiner  
Art Unit 1756

JAM  
10/31/05